REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 28-55 were pending, with claims 41-54 having been withdrawn. By the present response, claim 55 has been amended and claim 56 has been added. Thus, upon entry of the present response, claims 28-40 and 55-56 remain pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: page 16, lines 9-14; and the original claims.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 28-31 and 33-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,753,751 to Shannon (hereafter "*Shannon*") in view of GB 2256192 (hereafter "*GB '192*") on the grounds set forth on page 2 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to an improved method of preparing a thermal and/or acoustic insulation material based on dried precipitated silica that makes it possible to improve the properties of the insulation material with respect to mechanical integrity and thermal and/or acoustic insulation properties, relative to conventional methods. The method of the present invention is also simpler and

more economical than conventional methods. See, e.g., page 5, lines 5-15 and 32-37.

A method performed according to the principles of the present invention is set forth in claim 28. Claim 28 recites:

> *28. A method of preparing a thermal and/or acoustic insulation material based on dried precipitated silica, comprising the steps:*
> *(A) filtering an aqueous dispersion containing precipitated silica particles in a filter press, whereby a compacted filter cake is obtained; and then*
> *(B) drying the filter cake in the compacted state as obtained after step (A).*

The teachings of *Shannon* are limited to synthetically prepared bodies of molded high temperature thermal insulation material composed essentially of a matrix of chemically formed alkaline earth metal silicate interspersed with cotton fibers:

> . . . finely comminuted and reactive proportions of alkaline earth metal and siliceous constituents which are thoroughly admixed with a preponderant amount of water to form an aqueous slurry of suspension . . . . (column 6, lines 36-39)

Thus, contrary to the requirements of claim 28, the techniques described in *Shannon* do not involve filtering an aqueous dispersion containing precipitated silica particles. To the contrary, *Shannon* teaches reacting any silica present with an alkaline earth metal to form an alkaline earth metal silicate. Thus, contrary to the assertions contained in the Official Action, if one of ordinary skill in the art were to incorporate precipitated silica in the process of *Shannon*, the result would be a reaction of this precipitated silica within alkaline earth metal to render an alkaline earth metal silicate insulating material.

Moreover, *Shannon* teaches away from forming a thermal and/or acoustic insulation material from precipitated silica, and instead strongly favors and even requires the use of alkaline earth metal silicate to form such material. This is made clear from at least the following portions taken from the *Shannon* disclosure:

> The porous integrated crystalline or microcrystalline structure of alkaline earth metal silicate thermal insulation materials gives rise to many desirable physical characteristics which, as is well-known to those skilled in the art, are not attainable with other types of thermal insulation materials. (Emphasis added) (Col. 1, lines. 49-54)

> Before proceeding with a detailed description of the drawings, it is important to keep in mind that the nature and character of the present invention, as well as the structural and physical features thereof. . .is such that it applies without limitation to all forms, shapes and customary usages of hydrothermally or new pneumatolytically molded bodies of hydrous alkaline earth metal silicate insulation materials. (Emphasis added) (Col. 5, lines. 31-39)

As acknowledged in the Official Action, *Shannon* fails to disclose a process of forming a material from precipitated silica. In fact, *Shannon* goes a step further and teaches away from forming such insulating materials. *Shannon* is devoid of any hint that the objectives of the invention described therein can be achieved with any other insulative material other than an alkaline earth metal silicate.

GB '192 directed to silica-based insulation material which can be formed by mixing and compressing dry particulate materials. This type of dry pressing technique is discussed, for example, on page 3 of the present specification. As discussed on page 3 of the present specification, panels obtained according to such dry compaction methods usually suffer from insufficient physical and/or mechanical properties.

It is alleged on page 4 of the Official Action that it would have been obvious to one of ordinary skill in the art to "use precipitated silica" in the process disclosed by *Shannon*. Presumably, the rejection implies that it would have been obvious to form thermal and/or acoustic insulation material from dry precipitated silica rather than from the alkaline earth metal silicate taught by *Shannon*. However, this is clearly not the case. For the reasons described above in connection with the discussion of the teachings of *Shannon*, one of ordinary skill in the art would not have been motivated to utilize any material other than alkaline earth metal silicate to form the thermal and/or acoustic insulation material in light of the above quoted teachings contained in *Shannon*.

Even if one were to attempt to incorporate precipitated silica into the process taught by *Shannon*, the only mechanism for doing so would be utilize precipitated silica as the "siliceous constituents" (column 6, lines 37-38 of *Shannon*), and to react the silica with the alkaline earth metal to form alkaline earth metal silicate. Thus, one of ordinary skill in the art would not have been motivated to make the proposed combination. Even if the proposed combination were made, the claimed invention would not result.

Moreover, one of ordinary skill in the art would not have been motivated in the first place to turn to the teachings of a dry press type process as described by *GB '192* in an attempt to modify a wet process of the type described by *Shannon*. The two processes are completely inopposite and do not lend themselves to be modified by one another. *GB '192* teaches forming an insulating material by a process that requires pressing a dry precipitated silica powder. There is no hint whatsoever contained in *GB '192* of utilizing precipitated silica in a wet or slurry-based process.

Conversely, *Shannon* teaches forming an insulating material by a wet or slurry-based filter pressing technique, and contains no suggestion whatsoever that an insulating material can be suitably formed by a dry pressing technique.

Therefore, for at least the reasons set forth above, reconsideration and withdrawal of the rejection of claim 28 is respectfully requested. The remaining claims depend from claim 28. Thus, these claims are also distinguishable over the proposed combination of *Shannon* with *GB '192* for at least the same reasons noted above.

Claims 29 and 30 are also distinguishable over *Shannon* in view of *GB '192* for at least one additional reason. Namely, claims 29 and 30 each require that step (A) of claim 28 include utilizing a pressure of about 2 to about 10 bar. By contrast, *Shannon* teaches compaction using pressure filtration at pressures on the order of "several hundred pounds per square inch" (emphasis added; col. 7, lines. 13-14). These pressure levels greatly exceed the 2 to 10 bar range recited in claims 29 and 30. For instance, 10 bar of pressure corresponds to 145 psi. *GB '192* also teaches utilization of much greater pressures than that recited in claims 29 and 30. For example, on page 3 of *GB '192* it is disclosed that the constituent powders are mixed compacted according to the teachings of GB 1205572 (hereafter "*GB '572*"). *GB '572* teaches compaction of the dry powder in a molding die at a pressure of 200 psi. This pressure corresponds to 13.8 bar, which greatly exceeds the uppermost pressure limit of 10 bar recited in claims 29 and 30. Thus, the combined teachings of *Shannon* and *GB '192* would lead one of ordinary skill in the art to utilize a pressure which is greater than that required by the presently claimed invention. It is believed that these higher pressures are disadvantageous in terms of resulting

thermal and/or acoustic properties which may be obtained from the final product. For instance, as discussed on page 7 of the present specification, use of excessive pressures when compacting the precipitated silica can result in low pore volume which is prejudicial to insulation properties. Thus, the method of the presently claimed invention uses more moderate pressures which are believed to result in a superior material.

For at least the reasons explained above, claims 29 and 30 are also distinguishable over the proposed combination of *Shannon* with *GB '192* for at least these additional reasons.

Claim 30 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Shannon* and *GB '192*, further in view of U.S. Patent No. 6,468,493 to Chevallier et al. (hereafter "*Chevallier et al.*") on the grounds set forth on page 3 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

Chevallier et al. is applied as allegedly teaching a process of making a silica cake using a filtration pressure of 3.5-6 bar. However, even if the alleged teachings of *Chevallier et al.* were appropriately applied, which they are not, exactly as suggested in the grounds for ejection, the claimed invention would not result. Namely, *Chevallier et al.* fails to cure the deficiencies previously noted above in connection with the primary combination of *Shannon* and *GB '192*. Therefore, reconsideration withdrawal of the rejection is respectfully requested.

Claims 28 and 55 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Shannon*, in view of EP 0594469 (hereafter "*EP '469*") on the grounds set forth on page 4 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

A method performed according to further aspects of the present invention as set forth in many claim 55. Amended claim 55 recites:

> *55. A method of preparing a thermal and/or acoustic insulation material based on dried precipitated silica, comprising the steps:*
> *(A) filtering an aqueous dispersion containing precipitated silica particles in a filter press, whereby a compacted filter cake is obtained; and then*
> *(B) drying the filter cake in the compacted state as obtained after step (A);*
> *wherein the thermal and/or acoustic insulation material has a content of dried precipitated silica comprising at least 50% by weight of the insulation material.*

The deficiencies of *Shannon* are discussed above at length. These remarks are incorporated herein by reference.

Initially, it is noted that *EP '469* is published in French. Therefore, applicants respectfully request clarification as to the basis for the Examiner's interpretation of the contents of this document.

EP '469 is discussed at length in the present specification. *EP '469* not only fails to lead one of ordinary skill in the art any closer to the presently claimed invention and *Shannon*, in fact leads one of ordinary skill in the art even further away therefrom.

Both claims 28 and 55 each require drying a filter cake in the compacted state. By contrast, *EP '469* teaches pulverizing the filter cake to form a slurry, then drying the slurry. Thus, *EP '469* teaches away from the requirements of both claims 28 and 55. Advantageously, this distinction of the presently claimed invention provides the benefit of carrying out the drying step directly upon the compacted filter cake thus avoiding the extra pulverization step, and additionally eliminating the

requirement of a separate mold for drying the aqueous slurry. See, e.g., page 5 of the present specification.

In addition, it would not have been obvious to one of ordinary skill in the art to even have combined *Shannon* with *EP '469* in the first instance. As explained above, contrary to the assertions contained in the grounds for ejection, *Shannon* teaches away from using any insulating material other than alkaline metal silicate. Moreover, even if one of ordinary skill in the art were to attempt to incorporate silica into the process disclosed by *Shannon*, the result would be to react the silica with an alkaline earth metal to form alkaline earth metal silicate, thus falling outside the scope of the presently claimed invention.

Finally, with respect to claim 55 above, *EP '469* fails to suggest forming an insulating material having at least 50% by weight thereof comprising the dried filter cake.

Thus, for at least reasons noted above, reconsideration withdrawal the rejection of claims 28 and 55 is respectfully requested.

Newly presented claim 56 depends from claim 55. Thus, this claim is also distinguishable over the applied prior art for at least the same reasons noted above in connection with the rejection of claim 55.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: November 13, 2009 By: _____

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